

CLAIMS

1. A method of manufacturing an organic EL device, comprising the steps of:

forming grooves in an insulating film on a substrate;
filling said grooves with a solution in which an organic EL element material is dissolved; and
drying said solution.

2. A method of manufacturing an organic EL device, comprising the steps of:

forming first and second grooves in an insulating film on a substrate while the positions of their one edge portions are shifted from each other;

forming a stopper to prevent a solution from entering said first groove;

immersing said one edge portions of said first and second grooves in a first solution in which a first organic EL material is dissolved, and filling said second groove with said first solution while said stopper prevents said first solution from entering said first groove;

removing said stopper; and

immersing said one edge portion of said first groove in a second solution in the state where said second groove is apart from said second solution in which a second organic EL material is dissolved, and filling said first groove with said second solution.

3. A method of manufacturing an organic EL device, comprising the steps of:

forming first and second grooves in an insulating film on a substrate while the positions of their one edge portions and the other edge portions are shifted from each other;

immersing said one edge portion of said second groove in a first solution in the state where said first groove is apart from said first solution in which a first organic EL material is dissolved, and filling said second groove with said first solution; and

immersing said other edge portion of said first groove in a second solution in the state where said second groove is apart from said second solution in which a second organic EL material is dissolved, and filling said first groove with said second solution.

4. A method of manufacturing an organic EL device, comprising the steps of:

forming first, second and third grooves in an insulating film on a substrate while the positions of their one edge portions are shifted from each other;

forming first and second stoppers to prevent a solution from entering said first and second grooves;

preparing a first solution in which an organic material of a first luminescence color is dissolved;

immersing said other edge portions of said first, second and third grooves in said first solution, and filling said third groove with said first solution while said first and second stoppers prevent said first solution from entering said first and second grooves;

removing said second stopper;

preparing a second solution in which an organic material of a second luminescence color is dissolved;

immersing said one edge portions of said first and second grooves in said second solution in the state where said third groove is apart from said second solution, and filling said second solution in said second groove while said first stopper prevents said second solution from entering said second groove;

preparing a third solution in which an organic EL material of a third luminescence color is dissolved; and

immersing said one edge portion of said first groove in said third solution in the state where said second and third grooves are apart from said third solution, and filling said third groove with said third solution.

5. The method of manufacturing the organic EL device according to claim 4, wherein

a plurality of said first, second and third grooves are formed for one pixel.

6. The method of manufacturing the organic EL device according to claim 5, wherein

at least one of said first, second and third grooves is formed in the different number from the number of the other grooves.

7. The method of manufacturing the organic EL device according to claim 4, wherein

at least one of said first, second and third grooves is formed in a different width from the other grooves.

8. A method of manufacturing an organic EL device, comprising the steps of:

forming first, second and third grooves in an insulating film on a substrate while the positions of their one edge portions are shifted from each other and the position of the other edge portion of the third groove is shifted from the edge portions of said first and second grooves;

forming a stopper to prevent a solution from entering said first groove;

preparing a first solution in which an organic material of a first luminescence color is dissolved;

immersing said one edge portions of said first and second grooves in the first solution in the state where said third groove is apart from said first solution, and filling said second groove with said first solution while said stopper prevents said first solution from entering said first groove;

removing said stopper;

preparing a second solution in which an organic material of a second luminescence color is dissolved;

immersing said one edge portion of said first groove in said second solution in the state where said second and third grooves are apart from said second solution, and filling said first groove with said second solution;

preparing a third solution in which an organic material of a third luminescence color is dissolved; and

immersing said other edge portion of said third groove in said third solution in the state where said first and second grooves are apart from said third solution, and filling said third groove said third solution.

9. The method of manufacturing the organic EL device according to claim 8, wherein

a plurality of said first, second and third grooves are formed for one pixel.

10. The method of manufacturing the organic EL device according to claim 9, wherein

at least one of said first, second and third grooves is formed in the different number from the number of the other grooves.

11. The method of manufacturing the organic EL device according to claim 8, wherein

at least one of said first, second and third grooves is formed in a different width from the other grooves.

12. An organic EL device, comprising:
 - a substrate;
 - a first insulating film formed on said substrate;
 - a first electrode formed on said insulating film;
 - a second insulating film, which is formed on said insulating film and in which grooves are provided on a position corresponding to said first electrode;
 - an organic EL layer that is formed in said grooves and whose one surface is electrically connected to said first electrode; and
 - a second electrode electrically connected to the other surface of said organic EL layer.
13. The organic EL device according to claim 12, wherein plural sets of said grooves are provided in one pixel region and the luminescence colors of the organic EL layers formed in each set of grooves are different from each other.
14. The organic EL device according to claim 13, wherein the number of grooves of at least one set of each set is larger than the number of grooves of the other sets.
15. The organic EL device according to claim 13, wherein the width of at least one set of each set is wider than the width of the grooves of the other sets.
16. The organic EL device according to claim 12, wherein a buffer layer is provided at least between said first electrode and said organic EL layer or between said organic EL layer and said second electrode.
17. A method of manufacturing an organic EL device, comprising the steps of:
 - forming grooves in an insulating film on a substrate;
 - filling said grooves with a solution in which a material that becomes a buffer layer between an organic EL layer and an electrode is dissolved; and
 - drying said solution.
18. A method of manufacturing an organic EL device, comprising the steps of:

forming grooves in an insulating film on a substrate;
filling said grooves with a solution in which a material
that becomes an electrode is dissolved; and
drying said solution.